HUZAIFA SHAHID

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EDUCATION

NATIONAL UNIVERSITY OF SCIENCES AND TECHNOLOGY Islamabad, PK
Bachelor of Science Expected June 2026
Major in Mechanical Engineering
Cumulative GPA: 3.26/4.0
Relevant Coursework: Mechanics of Materials & Machines, Fluid Mechanics Thermodynamics, Manufacturing Processes, Heat & Mass Transfer, Control Systems, Robotics, Vehicle Dynamics

WORK EXPERIENCE

Kohinoor Textile Mills Limited Islamabad, PK
Power Plant Engineering Intern July 10, 2026- August, 2026

- Gained hands-on exposure to complete power plant operations, including control unit systems and energy generation processes using Niigata 18V32CLX and Wartsila engines.
- Analyzed and mapped fuel lines, steam lines, water lines and air lines ensuring comprehensive understanding of fluid/energy flow systems in industrial power generation.
- Studied boiler operations (Gas, Coal and Biomass), documenting efficiency differences and learning industrial safety protocols for high-pressure systems.
- Assisted in preventive maintenance inspections of pumps, compressors and lubrication systems observing troubleshooting methods for mechanical reliability.
- Prepared technical reports and efficiency improvement suggestions demonstrating ability to translate practical fieldwork into engineering insights.

UNIVERSITY PROJECTS

ELECTRIC HUMAN POWERED VEHICLE(e-HPVC) DESIGN AND SIMULATION
Machine Design

- Achieved 1st position in the EHPVC competition, scoring 95%, the highest among participating teams.
- Designed and fabricated a hybrid vehicle structure capable of sustaining a 2800 N load while achieving speeds of 35–40 km/h.
- Integrated electric transmission to enhance performance and reliability, balancing efficiency with rider input.
- Applied CAD modeling and engineering analysis to ensure optimal structural integrity and drive performance

ELBOW GEAR POWER TRANSMISSION
Mechanics of Machines

- Developed an elbow gear-based power transmission system, capable of delivering 10 Nm torque with a measured 15% efficiency improvement.
- Conducted mechanical testing to validate system durability, demonstrating practical application of gear kinematics and efficiency optimization.

ARDUINO-BASED BABY COT SYSTEM
Automation & Control Systems

- Designed and implemented a microcontroller-driven baby cot capable of automated rocking, ensuring continuous infant comfort.
- Integrated sensor monitoring features for added safety and functionality, showcasing embedded system design and practical automation application.

BANKING SYSTEM
Fundamentals of Programming(C++)

- Built a functional banking system in C++, incorporating core features such as account management, transactions, and data handling.
- Applied object-oriented programming concepts to simulate real-world financial operations in a structured environment. Created a lifting system model emphasizing mechanical control.

SCREW JACK LIFT TABLE
CAD Course

- Modeled and developed a screw jack lift table with emphasis on mechanical control and lifting stability using Creo Parametric software.

MATHEMATICAL MODELLING COMPARISON: FULLY ELECTRIC VS HYBRID VEHICLE
Vehicle Dynamics (Ongoing)

- Conducted a comparative mathematical study of fully electric vs. hybrid vehicle performance using MATLAB simulations.
- Evaluated parameters such as efficiency, energy consumption, and operating range, providing analytical insights into sustainable vehicle technology.

ONGOING RESEARCH WORK

AI-DRIVEN MULTI-OBJECTIVE TOOL PATH OPTMIZATION FOR SUSTAINABLE CNC MILLING PROCESS

Final Year Project (Ongoing) Expected April, 2026

- Developing AI-powered optimization framework for CNC milling tool paths with focus on sustainability and precision.
- Employing multi-objective algorithms to minimize machining time, energy consumption, and tool wear while maximizing surface quality.
- Conducting experiments through MATLAB simulations and CAM integration.
- Project aimed toward peer-reviewed publication, with potential contributions to smart manufacturing research and Industry 4.0.

ADDITIONAL

Achievements & Activities

- First Place – Electric Human Powered Vehicle Challenge (e-HPVC) May, 2025
- High Achievers Award – NUST 2023
- Runner-up – Certificate of Excellence, 10th ISYS Competition, GIKI (2022) Achievers Award Decemeber,2022

Leadership & Event Management

- Athletics Head – EME Olympiad
- Security & Promotions Lead – ASME EFx

Technical Skills

- CAD & Design: SolidWorks, Creo Parametric, AutoCAD
- Simulation & Analysis: ANSYS (FEA), MATLAB, CarSim
- Programming & Tools: C++, Arduino, Python